UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,270	05/04/2006	Hiroshi Saito	2006_0657A	1953

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CAMPOS, YAIMA

ART UNIT	PAPER NUMBER
2185	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/578,270	SAITO ET AL.
		Examiner	Art Unit	
		YAIMA CAMPOS	2185	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>04 May 2006</u>.

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-8</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-8</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>5/4/06</u>

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____

DETAILED ACTION

1.   The instant application having Application No. 10/578,270 has a total of 8 claims

pending in the application; there are 4 independent claims and 4 dependent claims, all of which

are ready for examination by the examiner.

INFORMATION CONCERNING OATH/DECLARATION

Oath/Declaration

2.   The applicant's oath/declaration has been reviewed by the examiner and is found to

conform to the requirements prescribed in **37 C.F.R. 1.63.**

STATUS OF CLAIM FOR PRIORITY IN THE APPLICATION

3.   As required bye **M.P.E.P. 201.14(c)**, acknowledgement is made of applicant's claim for

priority based on applications filed on 10/7/2004 PCT/JP04/15185 and 11/18/2003 (Japan 2003-

387886).

INFORMATION CONCERNING DRAWINGS

Drawings

4.   The applicant's drawings submitted are acceptable for examination purposes.

ACKNOWLEDGEMENT OF REFERENCES CITED BY APPLICANT

5.   As required by **M.P.E.P. 609(C)**, the applicant's submissions of the Information

Disclosure Statement dated May 4, 2006 is acknowledged by the examiner and the cited

references have been considered in the examination of the claims now pending. As required by

M.P.E.P 609 C(2), a copy of the PTOL-1449 initialed and dated by the examiner is attached to

the instant office action.

REJECTIONS NOT BASED ON PRIOR ART

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

7.   Claims 6-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter.

8.   As per **claims 6-8**, Applicant has claimed "a program"; which implies that Applicant is

claiming a system of software, per se, lacking the hardware necessary to realize any of the

underlying functionality. Therefore, claims 6-8 are directed to non-statutory subject matter as

computer programs, per se, i.e. the descriptions or expressions of the programs, are not physical

"things." They are neither computer components nor statutory processes, as they are not "acts"

being performed. Such claimed computer programs do not define any structural and functional

interrelationships between the computer program and other claimed elements of a computer,

which permit the computer program's functionality to be realized. In contrast, a claimed

computer-readable medium encoded with a computer program is a computer element which

defines structural and functional interrelationships between the computer program and the rest of

the computer which permit the computer program's functionality to be realized, and is thus

statutory.

REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of
> this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter
> as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   **Claim 1-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Awada et al.

(US 2002/0026566) in view of Haneda et al. (US 6,094,693).

11.   As per claim 1. A file recording apparatus for recording data onto a recording medium

which is written in clusters and erased in blocks each composed of a predetermined number of

contiguous clusters, the file recording apparatus comprising: **[data of different types is written**

in non-volatile devices 1 and 2 wherein types A and B are illustrated, which are

continuously written (fig. 3 and related text; pars. 0051-0056; 0141)]

a receiving unit *operable to* (*interpreted as intended use, see MPEP 2106 II(C)*) receive a request

for (*interpreted as intended use, see MPEP 2106 II(C)*) writing data of a specific one of a

plurality of files onto the recording medium; **[FMEM-control receives write requests for**

specific data of types A or B from control board (figs. 3 and 4 and related text; pars. 0052-

0056, 0082-0085)]

a plurality of file buffers each for a different one of the files; **[buffer-memory module 36 (fig.**

4) having a plurality of buffers, one for each data type (pars. 0059-0061, 0089, 0167-0168,

0175; fig. 3 and related text)]

a data accumulating unit *operable to* (*interpreted as intended use, see MPEP 2106 II(C)*)

accumulate the data requested to be written, in one of the file buffers corresponding to the

specific file; **[data of each type is accumulated in corresponding buffer (pars. 0059-0061,**

0089, 0167-0168, 0175; fig. 3 and related text)]

a judging unit *operable to* (*interpreted as intended use, see MPEP 2106 II(C)*) judge whether

data having been accumulated by the data accumulating unit is no smaller than a block size; and

[Awada discloses writing data from a buffer to a flash device, wherein a different buffer is

used for each data type and a plurality of flash devices are used (pars. 0059-0061; 0175-

0176), wherein writing from buffer to flash in block units and judging whether the amount

of data in the buffer is not smaller than a block size is within the scope of the disclosure (see

pars. 0012-0013 and 0022)]

a writing unit *operable* (*interpreted as intended use, see MPEP 2106 II(C)*), if the judging unit

judges affirmatively, to extract a block of data from the accumulated data and to write the

extracted data into a free block of the recording medium **[FMEM-write process writes data**

from corresponding evacuation buffers to non-volatile memory devices (figs. 3 and 4 and

related text; pars. 0059, 0085) wherein writing from buffer to flash in block units is within

the scope of the disclosure (see pars. 0012-0013 and 0022)].

      To further detail Awada, Haneda discloses **[writing file data such that only one file is**

written contiguously in the same erasure unit and may be mapped to encompass more than

one erasure unit (figs. 4 and 9 related text; col. 13, lines 36-49) wherein data corresponding

to each file data is written block by block, until each block is full (figs. 4 and 9 related text;

col. 13, lines 36-49)].

Awada and Haneda are analogous art in that they are of the same field of endeavor, that is, a system and/or method of memory control.

Haneda suggests that it would have been desirable to incorporate the writing file data such that only one file is written contiguously in the same erasure unit and may be mapped to encompass more than one erasure unit into the system of Awada because this would allow for **[high speed writing and erasure (col. 7, lines 46-53)]**.

Therefore, it would have been obvious to combine Awada with Haneda for the benefit of creating a system/method of recording file data to obtain the invention as specified in claim 1.

12.   As per claim 2. The file recording apparatus according to claim 1, wherein the judging unit judges affirmatively if data having been accumulated in a specific one of the file buffers to which the data accumulating unit most recently accumulated data is no smaller than the block size, and the writing unit extracts a block of data from a top of the specific file buffer, and writes the extracted data to the free block of the recording medium **[Awada discloses accumulating data in buffer and writing data from a buffer to a flash device, wherein a different buffer is used for each data type and a plurality of flash devices are used (pars. 0059-0061; 0175-0176), wherein writing from buffer to flash in block units and judging whether the amount of data in the buffer is not smaller than a block size is within the scope of the disclosure (see pars. 0012-0013 and 0022)]**.

13.   As per claim 3. The file recording apparatus according to claim 1, wherein the judging unit judges affirmatively when a total of quotients each calculated by dividing a size of data accumulated in a respective one of the file buffers by a cluster size is no smaller than the predetermined number, and the writing unit extracts data from the respective file buffers cluster

by cluster until the predetermined number of clusters is reached, and writes the extracted data to

the free block of the recording medium **[Awada discloses accumulating data in buffer and**

writing data from a buffer to a flash device, wherein a different buffer is used for each data

type and a plurality of flash devices are used (pars. 0059-0061; 0175-0176), wherein data of

each buffer is written to flash as long as there is data to be written, and writing in byte,

block or any other unit of data is within the scope of the disclosure (pars. 0167, 0012-0013,

0022, 0175-0176)].

14.   As per claim 4. The file recording apparatus according to claim 1, further comprising: an

erasing unit operable to erase the free block before the writing unit writes the extracted data to

the free block **[Awada discloses flash memory devices 1 and 2 are erased before writing**

(pars. 0055, 0065,)].

15.   As per claim 5. A control method for a file recording apparatus that includes a plurality

of file buffers each for a different one of a plurality of files and that records data onto a recording

medium, the recording medium being written in clusters and erased in blocks each composed of

a predetermined number of contiguous clusters, the method comprising: a receiving step of

receiving a request for writing data of a specific one of a plurality of files onto the recording

medium; a data accumulating step of accumulating the data requested to be written, in one of the

file buffers corresponding to the specific file; a judging step of judging whether data having been

accumulated in the data accumulating step is no smaller than a block size; and a writing step of

writing, if the judging step results in the affirmative, to extract a block of data from the

accumulated data and to write the extracted data into a free block of the recording medium **[The**

rationale in the rejection to claim 1 is herein incorporated].

16.   As per claim 6. A program for execution by a file recording apparatus that includes a

plurality of file buffers each for a different one of a plurality of files and that records data onto a

recording medium, the recording medium being written in clusters and erased in blocks each

composed of a predetermined number of contiguous clusters, the program comprising code

operable to cause the file recording apparatus to perform: a receiving step of receiving a request

for writing data of a specific one of a plurality of files onto the recording medium; a data

accumulating step of accumulating the data requested to be written, in one of the file buffers

corresponding to the specific file; a judging step of judging whether data having been

accumulated in the data accumulating step is no smaller than a block size; and a writing step of

writing, if the judging step results in the affirmative, to extract a block of data from the

accumulated data and to write the extracted data into a free block of the recording medium **[The**

rationale in the rejection to claim 1 is herein incorporated].

17.   As per claim 7, Awada disclose A program for execution by a file recording apparatus

that includes a driver data buffer and that records data onto a recording medium, the recording

medium being written in clusters and erased in blocks each composed of a predetermined

number of contiguous clusters, the program comprising code operable to cause the file recording

apparatus to perform: **[Awada discloses data of different types is accumulated in different**

buffers and written in non-volatile devices 1 and 2 wherein types A and B are illustrated

(fig. 3 and related text; pars. 0051-0056; 0141) wherein non-volatile memories erased in

units of blocks and written in bytes, blocks or any other suitable unit (pars. 0167, 0012-

0013, 0022, 0175-0176)]

a receiving step of receiving a write request that specifies a write address on the recording

medium at which data is requested to be written; **[write requests for data write having**

address/pointer (pars. 0130-0140; 0184)]

a first judging step of judging, if the driver data buffer is not empty, whether the write address

specified for the data requested to be written is contiguous to a write address specified for data

stored on the driver data buffer; **[continuous incoming data of each type is stored in**

corresponding data buffer (pars. 0141; 0175-0176)]

a data accumulating step of accumulating, if the first judging step results in the affirmative, in the

driver data buffer the data requested to be written; **[data of each type is accumulated in**

corresponding buffer (pars. 0059-0061, 0089, 0167-0168, 0175; fig. 3 and related text)]

a second judging step of judging whether a write address specified for data accumulated in the

driver data buffer falls on a block boundary of the recording medium; and a write step of writing,

if the second judging step results in the affirmative, a part of the accumulated data from a top of

the driver data buffer up to a point corresponding to the block boundary, onto the recording

medium **[Awada discloses accumulating data in buffer and writing data from a buffer to a**

flash device, wherein a different buffer is used for each data type and a plurality of flash

devices are used (pars. 0059-0061; 0175-0176), wherein data of each buffer is written to

flash as long as there is data to be written, and writing in byte, block or any other unit of

data is within the scope of the disclosure (pars. 0167, 0012-0013, 0022, 0175-0176)].

      To further detail Awada, Haneda discloses **[writing file data such that only one file is**

written contiguously in the same erasure unit and may be mapped to encompass more than

one erasure unit wherein data corresponding to each file data is written block by block,

until each block is full (figs. 4 and 9 related text; col. 13, lines 36-49)].

Awada and Haneda are analogous art in that they are of the same field of endeavor, that is, a system and/or method of memory control.

Haneda suggests that it would have been desirable to incorporate the writing file data such that only one file is written contiguously in the same erasure unit and may be mapped to encompass more than one erasure unit into the system of Awada because this would allow for **[high speed writing and erasure (col. 7, lines 46-53)]**.

18.   As per claim 8. The program according to claim 7, wherein the program comprises a filter driver of the recording medium **[Awada discloses data evacuation buffers are allocated to respective data types and incoming data is filtered to the corresponding buffer (par. 0175)]**.

RELEVANT ART CITED BY THE EXAMINER

19.   The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **MPEP 707.05(c)**.

20.   The following references teach writing to flash devices wherein data is accumulated in buffers.

US 6,141,249

US 6,691,205

CLOSING COMMENTS

Examiner's Note

21.   Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

a. STATUS OF CLAIMS IN THE APPLICATION

22.   The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. 707.07(i)**:

a(1) CLAIMS REJECTED IN THE APPLICATION

23.   Per the instant office action, claims 1-8 have received a first action on the merits and are subject of a first action non-final.

b. DIRECTION OF FUTURE CORRESPONDENCES

24.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yaima Campos whose telephone number is (571) 272-1232. The examiner can normally be reached on Monday to Friday 8:30 AM to 5:00 PM.

25.   If attempts to reach the above noted Examiner by telephone are unsuccessful, the

Examiner's supervisor, Mr. Sanjiv Shah, can be reached at the following telephone number: Area

Code (571) 272-4098.

        The fax phone number for the organization where this application or proceeding is

assigned is 571-273-8300. Information regarding the status of an application may be obtained

from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions

on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

September 9, 2008   /Yaima Campos/
                                                     Examiner, Art Unit 2185

/Sanjiv Shah/
Supervisory Patent Examiner, Art Unit 2185